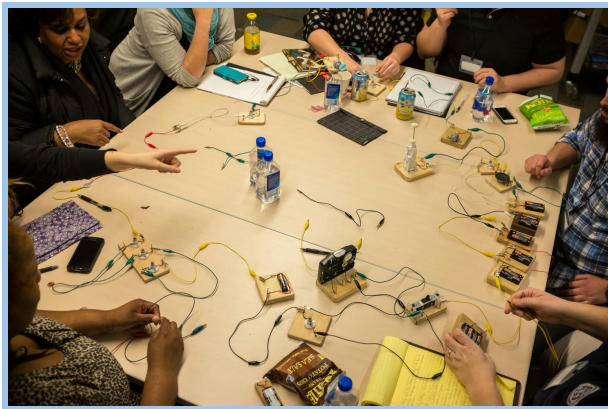


**STEM-rich After-school Making  
Professional Development Workshop  
for local After-school Educators & Site Coordinators  
Suggested Agenda for a 4 Hour session**

**Intro and Vision**

20min

- Group introductions (Name, site, and what hopes you have for this workshop)
- Host Introduces the SAM project and timeline of how it will be implemented locally
- View [Intro Video- Why Making?](#)

**Circuit Boards Activity**

*If you have multiple staff or coordinators from the same sites who will be working together on this project, we recommend having them sit together at small group tables during activities.*

5min

- PD Leaders introduce the Circuit Board activity in the same way you would with youth.

The [Circuit Boards After-school Educator Guide](#) linked here offers suggested prompts.

40min

- Participants explore circuits for 30min, following their interests or those of their groups

10min

- PD Leader asks participants to write or draw about a new discovery they made while investigating with Circuit Boards, something they would like a record of or a new question they have about electricity.

15min

- Small Group Reflection on Circuit Boards Activity. Suggested prompts:
  - What is something you discovered about circuitry that was new to you? How did you come to understand it?
  - Share with your group about your experience as a learner in this experience. What was the path of your ideas?
  - How does your experience of this activity relate to the ideas in the Intro video? How does it connect to your ideas and hopes for your students?
- Refer participants to the location of [the video linked here](#) for later viewing. It shows the materials needed as well as how to make a set of Circuit Boards.

10 min

Break!



## Scribbling Machines Activity

10 min

- PD Leader introduces the core value of Iteration in making/tinkering activities and how it is intentionally supported by activity designs and pedagogy that encourage drafts and testing.
- Introduce Scribbling Machines Activity. Suggested prompts and activity set-up ideas can be found in the [Scribbling Machines After-school Educator Guide linked here](#).

45 min

- Participants build Scribbling Machines for 45min, with roaming facilitation by PD leader/s

20min

- Scribbling Machines group reflection.  
*If you have the capacity, it can be nice to do some live note-taking of participant ideas on a computer hooked up to a screen or on a white board. This collective brain-storm can be shared with the group as a take-away resource later.*
  - Reflection as learner: Did you notice iterations and drafts happening while making Scribbling Machines? What spurred new ideas? How did you work through set-backs? Who/what helped you in your process?
  - Pedagogical Reflection: How did ideas move around the room? Did you support each other while making? How can we encourage this amongst youth?
  - Where are places youth might get stuck? How might we offer support to them through those moments without taking over?  
There is a page of “Good Problems” in the [Scribbling Machines After-school Educator guide](#) to help seed this conversation if needed.
- Refer participants to the location of [the video linked here](#) for later viewing. It shows the materials needed as well as tips on how to make a Scribbling Machine.

## Considerations for Culture & Equity

20min

- Show [intro video about equity linked here](#) (4min video length)
- Group Discussion suggested prompts (can be done in small groups or large):
  - Which of the ideas in the video seem familiar to your experience and the experiences of youth you work with?
  - What kinds of learning environments allow youth to be seen for their strengths?
  - What are some specific opportunities you see in the activities we’ve done today- for addressing issues of equity? What are some questions or concerns you might have?



### Overview of remaining Activities

*4 hours is likely not enough time to have participants do each of the 4 activities included in the SAM activity suite. We suggested Circuit Boards and Scribbling Machines because they are good activities to introduce the key concepts of the making approach to teaching & learning.*

#### 20min

- Share [After-school Educator Guide](#) and [location of video](#) for the Science Journal Activity which is suggested as the first activity in a 6-week session. It can be helpful if you have the tools and materials in the room for participants to familiarize themselves with.
- Share [After-school Educator Guide](#) and [location of video](#) for the Nature Bots Activity which is suggested as the culminating activity in a 6-week session. This activity could benefit from some discussion about the different ways you might want to approach working with nature. Where a nature walk with youth is possible (even an urban one), a discussion about how to frame this (see activity guide for suggestions) with youth could be helpful. If a nature walk is not idea for your area, some group brainstorming about alternatives would be helpful.
- Show [SAM Culminating Video](#) (5min video length). This features the work done by some 21st CCLC sites as well as the voices of participating teachers.

### Partnerships and Planning

*\*This is designed for instances where after-school educators will be partnering with outside organizations such as science centers to assist in program implementation.*

#### 5min

- Show [video about Partnerships](#) (4min video length)

#### 20min

- Allow partners present to spend time doing logistical planning for how they will roll out programming and discuss needs and supports they have for each-other.

\*\*\*\*END 4 Hour PD Workshop Agenda\*\*\*\*

## ADJUSTING THIS AGENDA FOR MORE OR LESS TIME

*We understand that you may not have 4 hours available to commit to a group PD workshop for the program. Or, you may have more time! Here are a few suggestions to accommodate other PD times:*

### 2 Hour PD:

- Ask participants to review the activity videos and support materials before-hand. Ideally, they will have had the chance to try making one or more of the activities themselves.
- Eliminate the Circuit Boards exploration and reflection times. You should still be able to do Scribbling Machines- but maybe with 30min of making time. It's ok if participants aren't able to finish their bots, as long as they got a sense of the making process.
- Eliminate the Partnerships & Planning section and encourage partners to do this during their normal prep time.

### Full Day PD:

- Chose either the Science Journals or Nature Bots Activity to add to the activities experienced by your participants.
- Include an in-person tutorial on how to build a set of Circuit Boards. You can prep enough materials for participants to assemble 1 or 2 of their own boards as practice.
- Add a lunch break
- Add a discussion about recognizing the different ways youth make meaning from their Making experiences- including verbal and nonverbal expressions. If this is done after participants do Circuit Boards and/or Scribbling Machines, they will have their own experiences with the activities fresh in their minds:
  - When did you or others use scientific language while working today? Is scientific language sometimes constraining to student exploration? When is it useful?
  - When do you notice gestures or body language as forms of communication or meaning-making? Did you find yourself making up new ways to describe or demonstrate a concept that was new to you?
  - Brainstorm a few ideas for Science Journal prompts that will encourage youth to creatively make sense of what they explored and learned while making.



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